

CRIS — A General Description

The rapid growth of suburban communities nationwide has caused an array of unplanned and often troubling impacts on public service delivery systems. Many communities have tried to deal with these impacts through traditional techniques (e.g., density controls and building moratoria). Others reached out for newer techniques destined to be reviewed by the courts (e.g., imposition of growth rates and "lids"). Sometimes these approaches were successful; often they were not.

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Some communities, of course, have maintained more stable populations—or even lost residents. This too prompts difficult fiscal questions. As the population ages, how will its service needs change? Will revenues for replacement of needed facilities become painfully restricted? Will long-time contracts

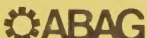
with community organizations need to be altered, reduced, or even eliminated?

Can municipal governments—regardless of population size, development status, and decision-making structure—substantially improve their ability to analyze these short- and long-term kinds of decisions:

- Current or new revenues
- Major changes in operating or capital budgets
- Capital improvement programming
- Changes in levels of services provided
- Departmental budget and personnel requests
- Adequacy of equipment inventories
- Annexations
- Fiscal impact of individual and multiple development proposals

COST/REVENUE IMPACT SYSTEM

CRIS

ASSOCIATION OF BAY AREA GOVERNMENTS  **ABAG**

Local Government Services Center

- Alternative growth policies
- General plan updates or amendments

Yes! **If** they are willing to use the latest in computerized planning tools.

Early in 1979, ABAG and the City of Fairfield unveiled what they believe to be the nation's most sophisticated yet least expensive and most easily adaptable fiscal analysis tool. Within nine months, 15 cities in or near the San Francisco Bay Area had opted to use it, and for a variety of purposes. It had also won a prestigious management innovation award from the International City Management Association.

The Cost/Revenue Impact System, or CRIS for short, was developed to help Fairfield officials implement a general plan for Cordelia, a new community developing in the southwest portions of the city. Fairfield's goal was a fiscally sound development that would not place undue strains on existing public service systems. ABAG, because it would be using dues from 87 cities and eight counties in its region to pay its share of the project's design costs, wanted a system that could be easily adapted for use by any jurisdiction.

Using CRIS

Basically, the tool can be used in two ways: short-range budget analysis and long-range planning decisions. In the short term (one to five years), CRIS helps project public service requirements and analyze departmental budget requests. It can also predict the effect of proposed development on public facilities, thereby allowing the local government to program capital development and expansion. In

the long term (five to ten years), CRIS can be used to predict the fiscal consequences of planning and policy patterns. In this way, the system can help to manage anticipated growth and bring development into closer harmony with the general plan. CRIS can also form a link to integrate planning more directly with policy formation in the political process. The CRIS Model was designed to be used in an overall comprehensive community planning framework.

What the CRIS system cannot do is give the decision-maker information about the intrinsic "goodness" or "badness" of a development. Developments which are expected to cost more than they will bring in through revenues may still be considered desirable in some communities based on non-economic goals or criteria. In other communities, open space may be considered more valuable than the excess revenues generated by fiscally sound developments. Thus, fiscal impact analysis is only one tool to be used by the community and its decision-makers.

Unlike its predecessors, CRIS is not merely a fiscal analysis tool. **It models not just fiscal flows or growth, but the local government's decision-making process.** Cities and counties can far more easily analyze the plethora of public costs and revenues associated with residential, commercial and industrial development—and can review major operating and capital budget adjustments. Using data already on hand for day-to-day decision-making, officials can obtain answers about current and future costs of virtually every municipal service—police, fire, education, sewerage, water, streets and roads, parks and recreation, and general government expenditures. They can analyze revenues from many sources, including

property and sales taxes, fees and service charges, and governmental grants and subventions.

Again, unlike its predecessors, CRIS was designed to be provided at cost to as many jurisdictions as possible. It was an extremely detailed and complex system to develop, yet it can be **easily and inexpensively tailored to jurisdictions of any size** that are considering the issues of growth management, economic development, or even post-Proposition 13 strategies. The 15 cities that have signed service contracts to use CRIS range in population from 6,000 to over 120,000. A dozen other cities, with populations up to 590,000, are now closely examining its potential for them.

Because transferability was a design goal, **flexibility is inherent in the system.** The computer programs that make up CRIS are fitted to the user and not vice versa. There is therefore only one fixed requirement in any configuration: a demographic subsystem, the heart of which is a modified cohort-survival model. This technique recognizes that using averages—average ages, for example—is too crude for the demands placed on government today. Instead, to continue the example of age, the population in each age group (cohort) would be moved forward in time one year throughout the projection period by multiplying the number of people in that age group by the probability of surviving to the next year. So a child in kindergarten at the start of the program would count as a high school student at the end of a 10-year projection. In other words, the system grows with the people in the city or county.

CRIS was the first computer-based fiscal analysis system built by a government agency for its own use. It can answer an incredible

range of questions introduced by the phrase, **“If I were a local official, I would want to know . . .”**; it is based on the way a local government does business; and it uses data already on hand. It is, in short, a striking and uniquely helpful tool for local governments grappling with some of their most critical and trying issues.

Conceptual design

Over the years, analysts have designed several methods by which to estimate costs and revenues associated with the operation of a particular public facility or service. Briefly, these methods can be categorized as follows: estimates by local officials, community standards approach, share allocation, accountants' approach, demographic patterns, income patterns, time-series analysis, econometric models, and alternative development patterns.

Each of these methods has strengths, but unfortunately each also has inherent weaknesses. Recognizing that pitfall, the designers of CRIS chose not to rely on any single method. Instead, several methods were used during development of the system, and CRIS is believed to be more flexible and accurate than other systems because of that approach.

The final CRIS Model has three major sections: input data and parameters, operating subsystems, and output reports.

Development schedules plus the base data and parameters are the two basic inputs. The development schedules (residential, commercial, and industrial) consist of annualized information about the nature and

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extent of proposed construction. The base data include current inventories of equipment, personnel classifications, school capacities and enrollment, and land use capability. Examples of input parameters would be the number of students per portable classroom, the number of police calls per given area, the fee schedule for construction permits, or the maintenance cost per foot of sewer line.

In the basic configuration, there are 10 functional subsystems: education, sewer, water, streets and roads, police, fire, parks and recreation, general government expenditures, general revenues, and the demographic model. Only the demographic model is a fixed requirement. A local government can add to, subtract from, or rearrange the other subsystems in any way it wants.

The outputs from CRIS consist of a summary report and a final report. The summary report is displayed at the terminal during the actual running of the model; it is primarily a graphic representation of the annual changes in key variables from each functional subsystem. These statistics allow the analyst to intervene in the system, varying certain parameters of the model or certain characteristics of the proposed project to measure the effect of these assumptions.

The analyst could, for example, measure the changes in fiscal flows resulting from a delay in proposed school construction or a decision to build more multi-family than single family homes in a subdivision.

The final report contains the detailed budgets or costs and revenues for each subsystem, along with demographic, personnel, capacity, and inventory statistics. The model can be run several times, with the user allowed to intervene frequently, before the final report is produced. (Each "what if" question costs about \$10 and takes no more than two minutes to run.) The final report is designed to represent a local government's annual budget and can be produced on a line printer.

In summary, the CRIS system is a specific application of cost/revenue methodology to a local jurisdiction. As long as the model replicates the daily operations of a given city or unincorporated area, it can be used to report the costs and revenues associated with those activities. A companion brochure describes this system's costs and the uses made by specific cities in greater detail. For further information, contact:



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